

Work Order ID 112208

Friday, May 02, 2014 9:06:03 AM

\*112208\*

Page 1

Item ID: 647.9612

Revision ID:

Item Name: RH Fwd Wiper Deflector

Start Date: 1/30/2014 Start Qty: 10.00

Required Date: 1/30/2014 Req'd Qty: 10.00

Reference:

Accept

\*N900040100\*

Setup Start \*NS1\*

Stop \*NS2\*

Cust Item ID:

Customer:

\*10\*

\*10\*

Approvals:

Process Plan:

CL

Date: 14/05/02

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start \*NR1\*

Stop \*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

647.9600

N/C

110

0.00

\*110\*

Outsource5

Outsource process - Machining

Memo

ISSUE P/O:

24096

POSSIBLE SUPPLIER: ETM Industries Inc.

0.00

1- MANUFACTURE AS PER DWG

2- HARD ANODIZE BLACK AS PER DWG

3- PRIME AS PER DWG

Certificate of conformaty required

CL 14/05/06 10

120

Receive & Inspect for Damage & Mat'l Certs

0.00

\*120\*

Packaging

Packaging

Memo

0.00

14/7/25 (12)

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other
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**Work Order ID 112208**

Friday, May 02, 2014 9:06:03 AM

**\*112208\***

Page 2

Item ID: 647.9612 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: RH Fwd Wiper Deflector  
Start Date: 1/30/2014 Start Qty: 10.00 **\*10\*** Cust Item ID:  
Required Date: 1/30/2014 Req'd Qty: 10.00 **\*10\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130 QC6- Inspect dimensions to drawing 0.00

**\*130\***

QC

Memo

Quality Control

DAS

16

9-89

14/7/30

(10)

140

Identify as per dwg & Stock Location: CCK 85 0.00**\*140\***

Packaging

Memo

0.00

Packaging

\*\*\*IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV\*\*\*

10X

DAS  
28  
9-89

JUL 31 2014

150

QC21- Final Inspection - Work Order Release 0.00

**\*150\***

QC

Memo

0.00

Quality Control

14/7/31

u 1407-31

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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# Picklist Print

Friday, May 02, 2014 9:09:04 AM

Page 1

Work Order ID: 112208

**\*112208\***

Parent Item: 647.9612

**\*647 9612\***

Parent Item Name: RH Fwd Wiper Deflector

Start Date: 1/30/2014

Required Date: 1/30/2014

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 12-11-19 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
647.9612P		Purchased	No				Each	0.0000		10			
<b>*647 9612P*</b>									<b>**</b>				
RH Fwd Wiper Deflector													
M7075T6B4.000X4.500		Purchased	No				f	32.0000		9			
<b>*M7075T6B4 000X4 500*</b>									<b>**</b>				
7075-T6 BAR 4.000' X 4.500"													
				<u>Location</u>			<u>Loc Qty</u>						
				MAT001			32						
				m126981			8						
				m127539			24						

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

**FAULT CATEGORY**

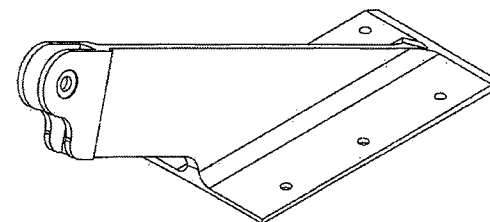
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other
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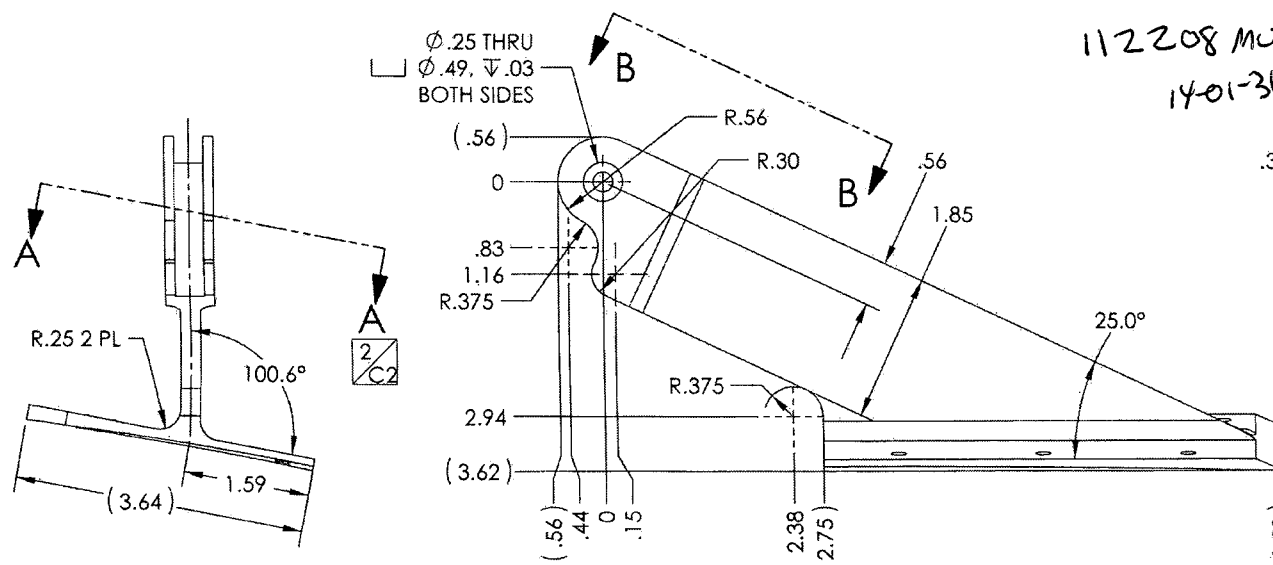
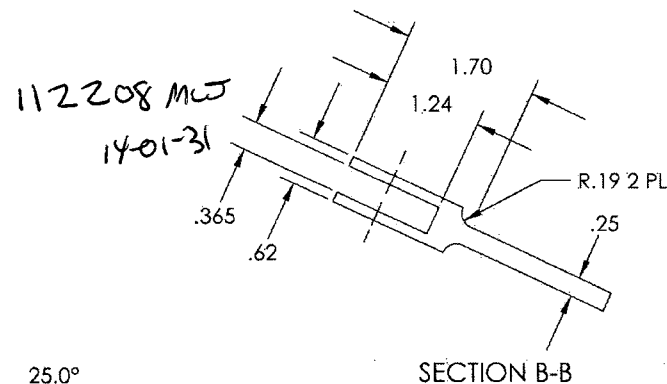
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
REV.	LATE PROTOTYPING RELEASE, PRT		
N/C	INITIAL RELEASE	06-30-10	P. BRAVO

# NOTES:

- 1 MATERIAL: ALUMINUM 7075-T6S1 PER AMS-QQ-A-250/12.
- 2 FINISH: ANODIZE PER MIL STD-A-8625, TYPE III, CLASS 2, COLOR BLACK;  
PRETREAT PRC-DESOTO PR-148 ADHESION PROMOTER;  
PRIME IAW MIL-P-23377J TYPE I CLASS N.
- 3 PART DIMENSIONS CONTROLLED BY CAD MODEL  
FILE NAME: 647.9610 NC LH FWD WIPER DEFLECTOR.SLDPRJT, LAST MODIFIED 06/30/10.
- 4 PART DIMENSIONS CONTROLLED BY CAD MODEL  
FILE NAME: 647.9611 NC LH AFT WIPER DEFLECTOR.SLDPRJT, LAST MODIFIED 06/30/10.
- 5 PART DIMENSIONS CONTROLLED BY CAD MODEL  
FILE NAME: 647.9612 NC RH FWD WIPER DEFLECTOR.SLDPRJT, LAST MODIFIED 06/30/10.
- 6 PART DIMENSIONS CONTROLLED BY CAD MODEL  
FILE NAME: 647.9613 NC RH AFT WIPER DEFLECTOR.SLDPRJT, LAST MODIFIED 06/30/10.
7. DEBURR AND BREAK ALL SHARP EDGES.
8. IDENTIFY IAW MPP-120. LASER ETCH P/N REVISION, 12 PT. CENTURY GOTHIC.



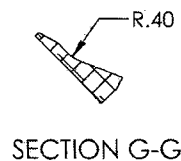
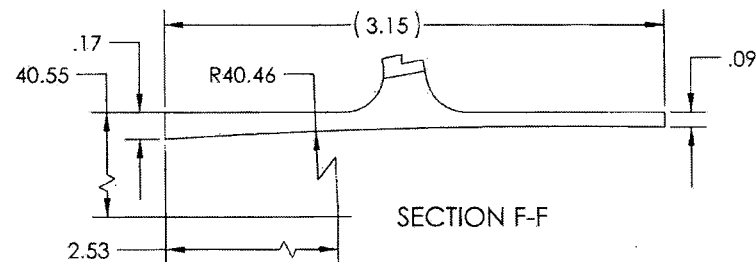
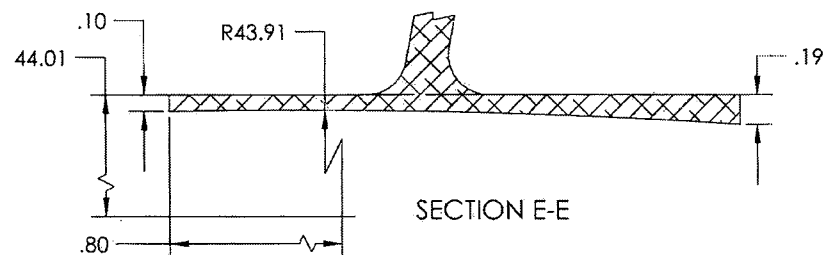
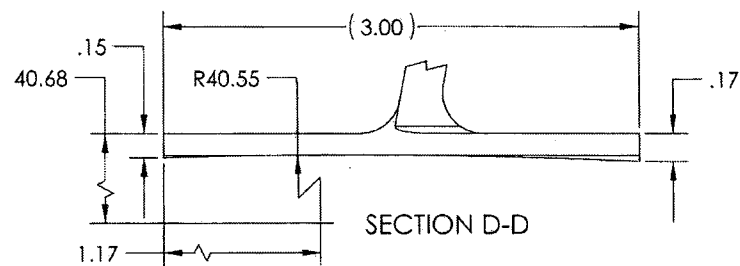
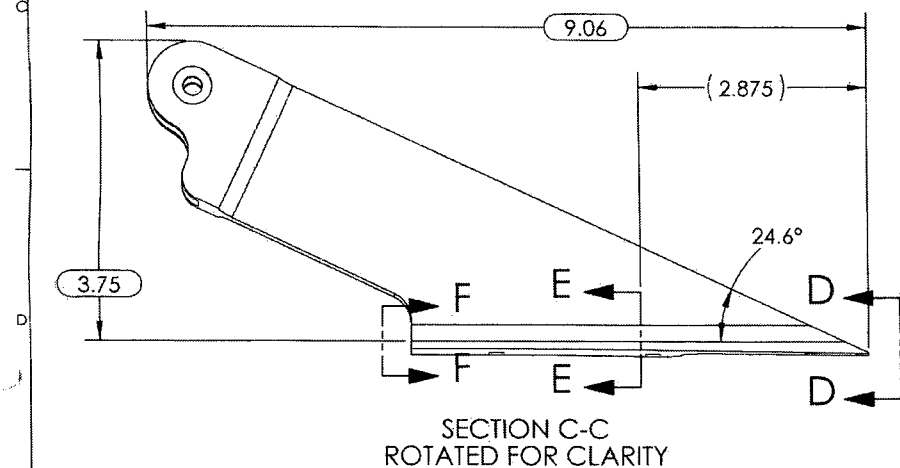
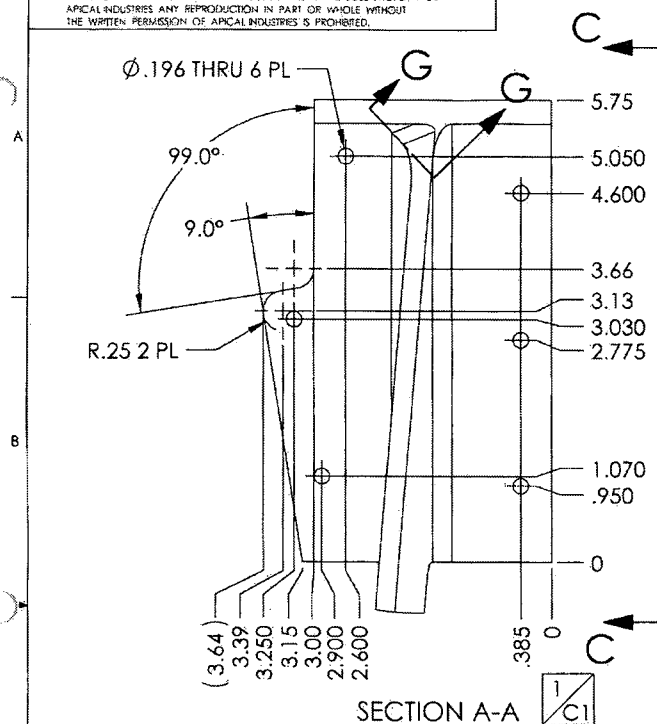
647.9610 SHOWN  
647.9612 OPPOSITE



647.9613	RH AFT WIPER DEFLECTOR	△	△	△
647.9612	RH FWD WIPER DEFLECTOR	△	△	△
647.9611	LH AFT WIPER DEFLECTOR	△	△	△
647.9610	LH FWD WIPER DEFLECTOR	△	△	△
QTY	PART #	DESCRIPTION	MAT'L	SPEC.
1	647.9600	WIPER DEFLECTOR		
<div> <div> <p>APICAL INDUSTRIES</p> <p>2608 TEMPLE HEIGHTS DR.</p> <p>OCEANSIDE, CA. 92056-3512 (760)724-5300</p> </div> <div> <p>WIPER DEFLECTOR</p> <p>SCALE NONE</p> <p>SHEET 1 OF 5</p> </div> </div>				

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

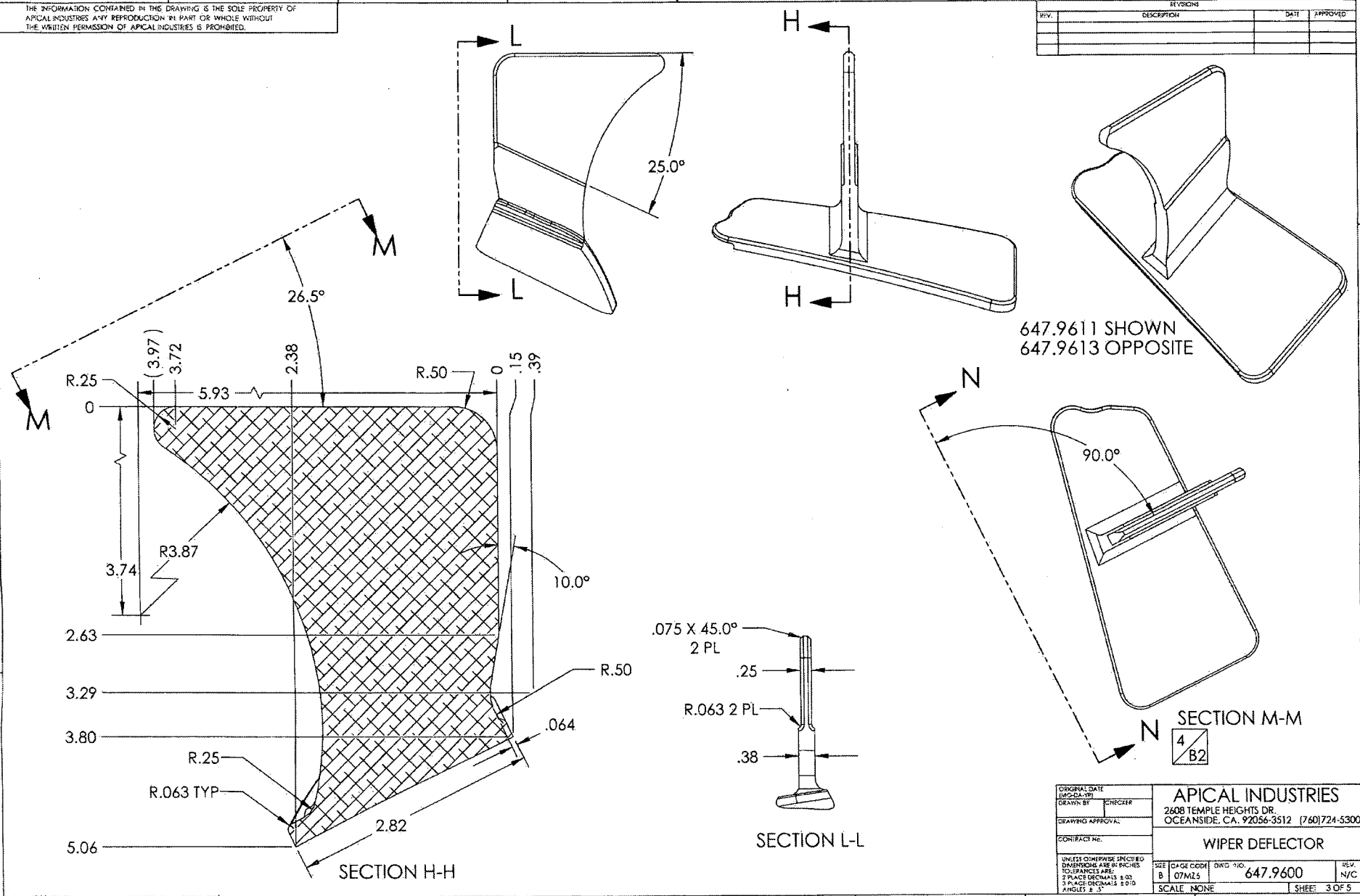


ORIGINAL DATE 10/01/01		APICAL INDUSTRIES	
DRAWN BY		2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL		OCEANSIDE, CA. 92056-3512 (760)724-5300	
CONTRACT NO.		WIPER DEFLECTOR	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SCALE NONE	SHEET 2 OF 5
REV. 8	DATE 07/24/05	DWG. NO. 647.9600	REV. N/C



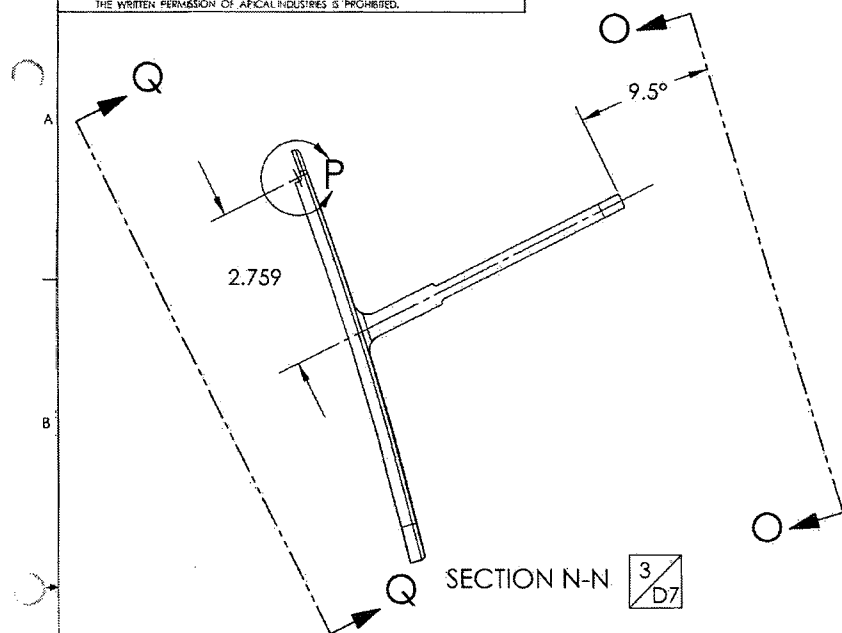
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REV.	DESCRIPTION	DATE	APPROVED

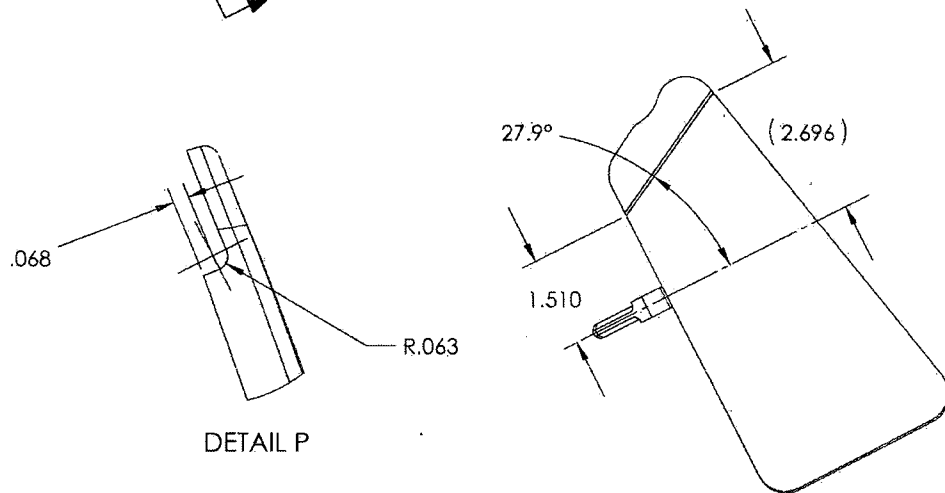


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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

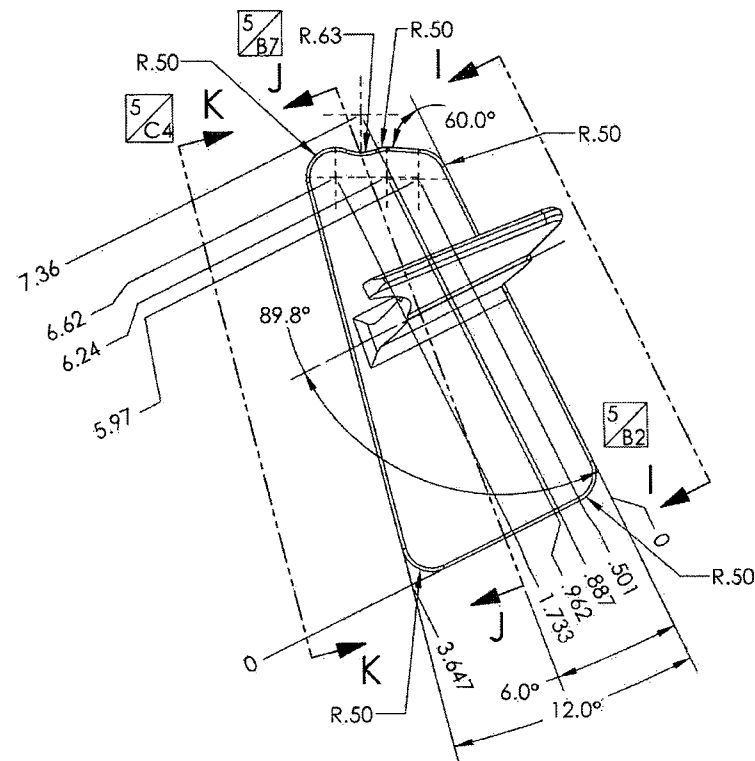


SECTION N-N 3  
D7



DETAIL P

SECTION Q-Q



SECTION O-O

ORIGINAL DATE DWG. NO.		CHECKER	
DRAWING APPROVAL		CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.010 ANGLES ± 5°		REV. 8	DATE 07/12/16
SCALE NONE		SHEET 4 OF 5	

**APICAL INDUSTRIES**  
2608 TEMPLE HEIGHTS DR.  
OCEANSIDE, CA. 92056-3512 (760)724-5300

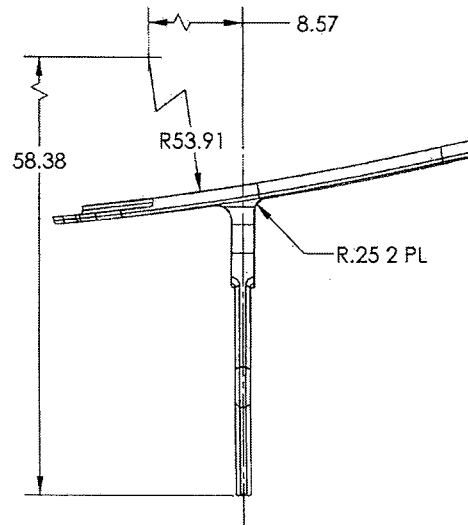
**WIPER DEFLECTOR**

647.9600

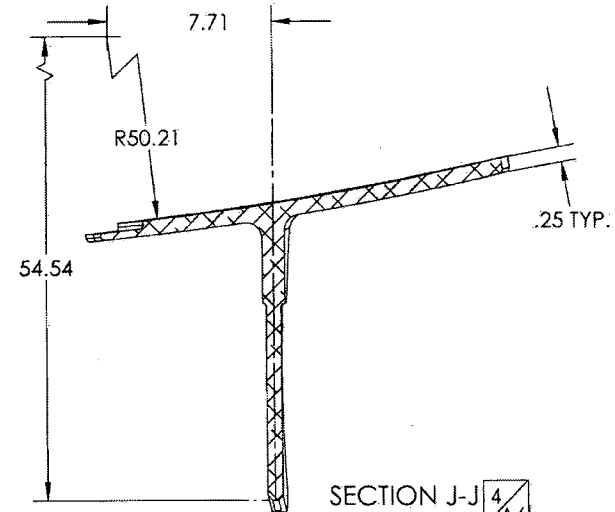
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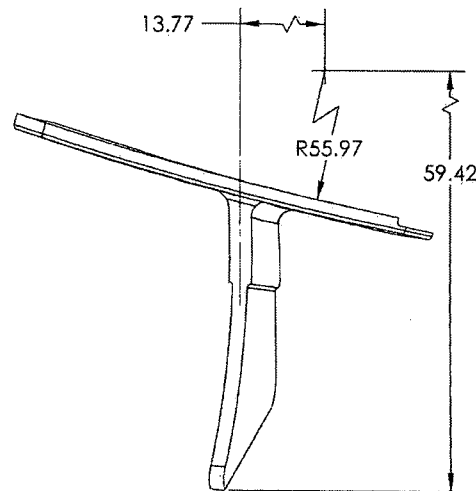
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



SECTION I-I  $\frac{4}{B7}$



SECTION J-J  $\frac{4}{A6}$



SECTION K-K  $\frac{4}{B5}$

ORIGINAL DATE: (MFC24-18) 06-28-18		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY: J. JACKSON			
CHECKED BY: P. BRAVO			
DRAWING APPROVAL: P. BRAVO 06-28-18		WIPER DEFLECTOR	
CONTRACT NO.:			
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°			
SHEET	CAGE CODE	DWG. NO.	REV.
07/246		647.9600	N/C
SCALE: NONE		SHEET 5 OF 5	



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO24096**

Purchase Order Date 5/6/2014

PO Print Date 5/9/2014

Page Number 1 of 3

Order From :  
E.T.M. INDUSTRIES INC.  
310 HALL AVENUE  
BOX 610  
  
RENFREW, ONTARIO K7V 4E7  
CANADA

VC-ETM001

Ship To : DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

*REVISED*

Contact Name  
Vendor Phone 613-432-6136  
  
Ship To Contact  
Ship To Phone  
Ship Via: FedEx PI collect  
Ship Acct:

Buyer Chantal Lavoie  
Customer POID  
Customer Tax # 10127-2607  
Terms Net 30  
Currency CAD  
FOB FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	647.9310P  MACHINE AS PER DWG 647.9310	LH Bracket	6/27/2014 Yes 6/27/2014		10.00 Each	\$355.00	\$3,550.00
Line Total:							\$3,550.00
2	647.9612P  MACHINE AS PER DWG 647.9612 B112208	RH Fwd Wiper Deflector	6/27/2014 Yes 6/27/2014		10.00 Each	\$645.00	\$6,450.00
Line Total:							\$6,450.00
3	647.9316P  MACHINE AS PER DWG 647.9316 B115397	Crossbar Bracket	6/27/2014 Yes 6/27/2014		10.00 Each	\$215.00	\$2,150.00

Note:

5/9/2014

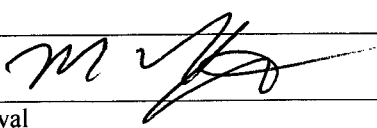
**ETM Industries Inc**

Page 1 of 8

AS9102 Revision A First Article Inspection

Form 1: Part Number Accountability

1. Part Number <b>647.9612P</b>	2. Part Name <b>R/H FWD WIPER DEFLECTOR</b>		3. Serial Number <b>FAI PART</b>
5. Part Revision Level <b>REV N/C</b>	6. Drawing Number <b>647.9600</b>	7. Drawing Revision Level <b>N/C</b>	8. Additional Changes <b>N/A</b>
9. Manufacturing Process Reference <b>90004</b>	10. Organization Name <b>ETM Industries Inc.</b>	11. Supplier Code <b>N/A</b>	12. P.O. Number <b>24096 LINE002</b>
13. Detail FAI <input checked="" type="checkbox"/>	14. Full FAI <input checked="" type="checkbox"/> Partial FAI <input type="checkbox"/>		Baseline Part Number including Revision Level
Assembly FAI <input type="checkbox"/>	Reason for Partial FAI: <b>Not Applicable</b>		<b>N/A</b>
a) If above part number is a detail part only, go to Field 19 b) If above part number is an assembly, go to the "Index" section below.			
<b>INDEX of part numbers or sub assembly numbers required to make the assembly noted above.</b>			
15. Part Number	16. Part Name	17. Part Serial Number	18. FAI Report Number
N/A	N/A	N/A	N/A

1) Signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.	
2) Also indicate if the FAI is complete per Section 5.4: <input checked="" type="checkbox"/> FAI Complete <input type="checkbox"/> FAI Not Complete	
19. Signature JESSIE RIOPELLE	20. Date 07/25/14
21. Reviewed by 	22. Date 7/28/14
23. Customer Approval	24. Date

AS9102 Revision A First Article Inspection


Form 2: Product Accountability – Raw Material, Specifications and Special Process(es),  
Functional Testing

1. Part Number <b>647.9612P</b>	2. Part Name <b>R/H FWD WIPER DEFLECTOR</b>	3. Serial Number <b>FAI PART</b>		4. FAI Report Number <b>N/A</b>	
5. Material or Process – Name	6. Specification Number	7. Code	8. Special Process Supplier Code	9. Customer Approval Verification (Yes/No/N/A)	10. Certificate of Conformance Number
ALUMINUM ALLOY	7075-T651 PER AMS-QQ-A-250/12.	N/A	N/A	N/A	THYSSENKRUPP HEAT #161721
ANODIZE	PER MIL STD-A-8625, TYPE III, CLASS 2, COLOUR BLACK.	N/A	N/A	N/A	VERDUN CERT: 309637-00
PAINT	PRETREAT PRC-DESOTO PR-148 ADHESION PROMOTER; PRIME IAW MIL-P-2377 J TYPE I, CLASS N.	N/A	N/A	N/A	RLD CERT:99401
11. Functional Test Procedure Number	12. Acceptance report number, if applicable				
Not Applicable	Not Applicable				
13. Comments					
14. Prepared By      JESSIE RIOPELLE			15. Date      07/25/14		

**ETM Industries Inc**

AS9102 Revision A First Article Inspection  
Form 3: Characteristic Accountability, Verification and Compatibility Evaluation

Page 3 of 8

1. Part Number <b>647.9612P</b>			2. Part Name <b>R/H FWD WIPER DEFLECTOR</b>		3. Serial Number <b>FAI PART</b>		4. FAI Report <b>N/A</b>
Characteristic Accountability				Inspection / Test Results			
5. Char. No.	6. Reference Location	7. Characteristic Designator	8. Requirement	9. Results	10. Designated Tooling	11. Non Conformance Number	14. Reference Documents
1	DWG SHEET 1	N/A	DEBURR AND BREAK ALL SHARP EDGES.	AACEPT	VERIFY	N/A	N/A
2	DWG SHEET 1	N/A	IDENTIFY IAW MPP-120. LASER ETCH P/N REVISION, 12PT CENTURY GOTHIC.	ACCEPT	VERIFY	N/A	N/A
3	DWG SHEET 1	N/A	R.25 2PL	R.25	RADIUS GAUGE	N/A	N/A
4	DWG SHEET 1	N/A	3.64	3.639	VERNIER	N/A	N/A
5	DWG SHEET 1	N/A	1.59	1.5842	CMM	N/A	N/A
6	DWG SHEET 1	N/A	100.6°	100.65°	CMM	N/A	N/A
7	DWG SHEET 1	N/A	∅ .25 THRU	.2500	CMM	N/A	N/A
8	DWG SHEET 1	N/A	 ∅ .49	.486	VERNIER	N/A	N/A
9	DWG SHEET 1	N/A	▽ .03 BOTH SIDES	.032 / .032	VERNIER	N/A	N/A
10	DWG SHEET 1	N/A	.56	.5634	CMM	N/A	N/A
11	DWG SHEET 1	N/A	.83	.8295	CMM	N/A	N/A
12	DWG SHEET 1	N/A	1.16	1.1594	CMM	N/A	N/A
13	DWG SHEET 1	N/A	R.375	.3760	CMM	N/A	N/A

The signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.

12. Prepared By JESSIE RIOPELLE

13. Date 07/25/14

**ETM Industries Inc**AS9102 Revision A First Article Inspection  
Form 3: Characteristic Accountability, Verification and Compatibility Evaluation

Page 4 of 8

1. Part Number <b>647.9612P</b>				2. Part Name <b>R/H FWD WIPER DEFLECTOR</b>		3. Serial Number <b>FAI PART</b>		4. FAI Report <b>N/A</b>	
Characteristic Accountability				Inspection / Test Results					
5. Char. No.	6. Reference Location	7. Characteristic Designator	8. Requirement	9. Results	10. Designated Tooling	11. Non Conformance Number	14. Reference Documents		
14	DWG SHEET 1	N/A	2.94	2.9369	CMM	N/A	N/A		
15	DWG SHEET 1	N/A	3.62	3.62		N/A	N/A		
16	DWG SHEET 1	N/A	.56	.5634	CMM	N/A	N/A		
17	DWG SHEET 1	N/A	.44	.4415	CMM	N/A	N/A		
18	DWG SHEET 1	N/A	.15	.1508	CMM	N/A	N/A		
19	DWG SHEET 1	N/A	R.375	.3718	CMM	N/A	N/A		
20	DWG SHEET 1	N/A	2.38	2.3749	CMM	N/A	N/A		
21	DWG SHEET 1	N/A	2.75	2.7500	CMM	N/A	N/A		
22	DWG SHEET 1	N/A	25.0°	24.54°	CMM	N/A	N/A		
23	DWG SHEET 1	N/A	1.85	1.8535	CMM	N/A	N/A		
24	DWG SHEET 1	N/A	.56	.5634	CMM	N/A	N/A		
25	DWG SHEET 1	N/A	R.30	.2994	CMM	N/A	N/A		
26	DWG SHEET 1	N/A	R.56	.5634	CMM	N/A	N/A		

The signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.

12. Prepared By JESSIE RIOPELLE

13. Date 07/25/14



**ETM Industries Inc**

AS9102 Revision A First Article Inspection  
Form 3: Characteristic Accountability, Verification and Compatibility Evaluation

Page 5 of 8

1. Part Number <b>647.9612P</b>			2. Part Name <b>R/H FWD WIPER DEFLECTOR</b>			3. Serial Number <b>FAI PART</b>		4. FAI Report <b>N/A</b>	
Characteristic Accountability					Inspection / Test Results				
5. Char. No.	6. Reference Location	7. Characteristic Designator	8. Requirement	9. Results	10. Designated Tooling	11. Non Conformance Number	14. Reference Documents		
27	DWG SHEET 1	N/A	.365	.362	VERNIER	N/A	N/A		
28	DWG SHEET 1	N/A	.62	.619	VERNIER	N/A	N/A		
29	DWG SHEET 1	N/A	.25	.251	VERNIER	N/A	N/A		
30	DWG SHEET 1	N/A	R.19 2PL	R.1859	CMM	N/A	N/A		
31	DWG SHEET 1	N/A	1.24	1.240	VERNIER	N/A	N/A		
32	DWG SHEET 1	N/A	1.70	1.7041	CMM	N/A	N/A		
33	DWG SHEET 2	N/A	Ø .196 THRU	.1974-.1978	CMM	N/A	N/A		
34	DWG SHEET 2	N/A	99.0°	99.07°	CMM	N/A	N/A		
35	DWG SHEET 2	N/A	9.0°	9.00°	CMM	N/A	N/A		
36	DWG SHEET 2	N/A	R.25 2PL	.2516 / .2513	CMM	N/A	N/A		
37	DWG SHEET 2	N/A	3.64	3.6401	CMM	N/A	N/A		
38	DWG SHEET 2	N/A	3.39	3.3885	CMM	N/A	N/A		
39	DWG SHEET 2	N/A	3.250	3.2503 / 3.257	CMM	N/A	N/A		

The signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.

12. Prepared By JESSIE RIOPELLE

13. Date 07/25/14

**ETM Industries Inc**

AS9102 Revision A First Article Inspection  
Form 3: Characteristic Accountability, Verification and Compatibility Evaluation

Page 6 of 8

1. Part Number <b>647.9612P</b>				2. Part Name <b>R/H FWD WIPER DEFLECTOR</b>		3. Serial Number <b>FAI PART</b>		4. FAI Report <b>N/A</b>	
Characteristic Accountability					Inspection / Test Results				
5. Char. No.	6. Reference Location	7. Characteristic Designator	8. Requirement	9. Results	10. Designated Tooling	11. Non Conformance Number	14. Reference Documents		
40	DWG SHEET 2	N/A	3.15	3.1479	CMM	N/A	N/A		
41	DWG SHEET 2	N/A	3.00	3.0027	CMM	N/A	N/A		
42	DWG SHEET 2	N/A	2.900	2.9003	CMM	N/A	N/A		
43	DWG SHEET 2	N/A	2.600	2.6008	CMM	N/A	N/A		
44	DWG SHEET 2	N/A	.385	.3862-.3864	CMM	N/A	N/A		
45	DWG SHEET 2	N/A	.950	.9480	CMM	N/A	N/A		
46	DWG SHEET 2	N/A	1.070	1.0683	CMM	N/A	N/A		
47	DWG SHEET 2	N/A	2.775	2.7730	CMM	N/A	N/A		
48	DWG SHEET 2	N/A	3.030	3.0285	CMM	N/A	N/A		
49	DWG SHEET 2	N/A	3.13	3.1288	CMM	N/A	N/A		
50	DWG SHEET 2	N/A	3.66	3.6953	CMM	N/A	N/A		
51	DWG SHEET 2	N/A	4.600	4.5981	CMM	N/A	N/A		
52	DWG SHEET 2	N/A	5.050	5.0481	CMM	N/A	N/A		

The signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.

12. Prepared By JESSIE RIOPELLE

13. Date 07/25/14

**ETM Industries Inc**

AS9102 Revision A First Article Inspection  
Form 3: Characteristic Accountability, Verification and Compatibility Evaluation

Page 7 of 8

1. Part Number <b>647.9612P</b>				2. Part Name <b>R/H FWD WIPER DEFLECTOR</b>		3. Serial Number <b>FAI PART</b>		4. FAI Report <b>N/A</b>	
Characteristic Accountability					Inspection / Test Results				
5. Char. No.	6. Reference Location	7. Characteristic Designator	8. Requirement	9. Results	10. Designated Tooling	11. Non Conformance Number	14. Reference Documents		
53	DWG SHEET 2	N/A	5.75	5.749	CALIPERS	N/A	N/A		
54	DWG SHEET 2	N/A	9.06	9.082	HEIGHT GAUGE AND INDICATOR	N/A	N/A		
55	DWG SHEET 2	N/A	3.75	3.765	HEIGHT GAUGE AND INDICATOR	N/A	N/A		
56	DWG SHEET 2	N/A	24.6°	25°	PROTRACTOR	N/A	N/A		
57	DWG SHEET 2	N/A	2.875	2.875	REFERENCE	N/A	N/A		
58	DWG SHEET 2	N/A	.15	.142	CALIPERS	N/A	N/A		
59	DWG SHEET 2	N/A	40.68	40.68 VERIFIED TO CAD	CMM	N/A	N/A		
60	DWG SHEET 2	N/A	1.17	1.17 VERIFIED TO CAD	CMM	N/A	N/A		
61	DWG SHEET 2	N/A	R40.55	R40.55 VERIFIED TO CAD	CMM	N/A	N/A		
62	DWG SHEET 2	N/A	3.00	3.001	CALIPERS	N/A	N/A		
63	DWG SHEET 2	N/A	.17	.165	CALIPERS	N/A	N/A		
64	DWG SHEET 2	N/A	R43.91	R43.91 VERIFIED TO CAD	CMM	N/A	N/A		
65	DWG SHEET 2	N/A	.10	.099	CALIPERS	N/A	N/A		

The signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.

12. Prepared By JESSIE RIOPELLE

13. Date 07/25/14

**ETM Industries Inc**

AS9102 Revision A First Article Inspection  
Form 3: Characteristic Accountability, Verification and Compatibility Evaluation

Page 8 of 8

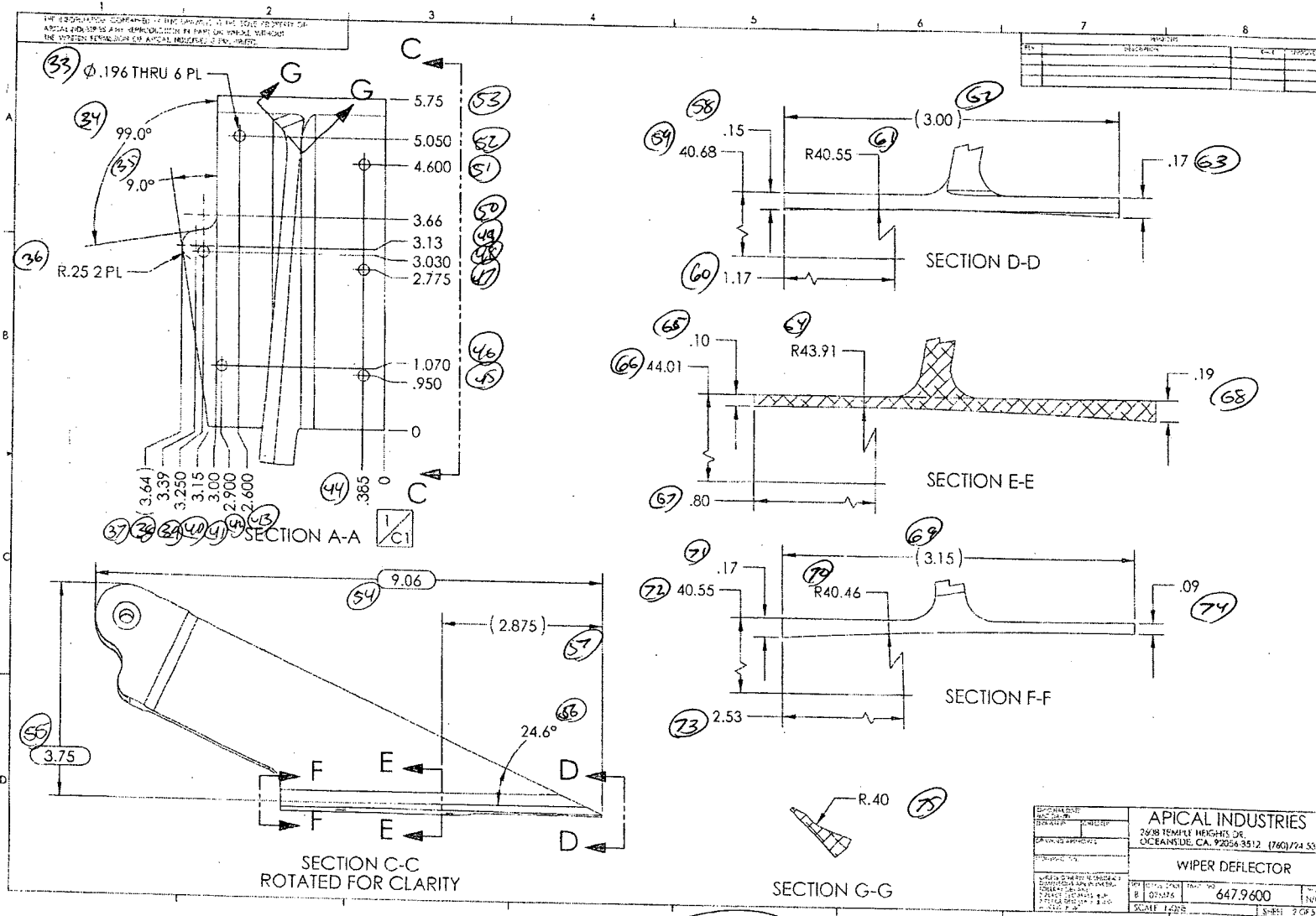
1. Part Number <b>647.9612P</b>				2. Part Name <b>R/H FWD WIPER DEFLECTOR</b>		3. Serial Number <b>FAI PART</b>		4. FAI Report <b>N/A</b>	
<b>Characteristic Accountability</b>				<b>Inspection / Test Results</b>					
5. Char. No.	6. Reference Location	7. Characteristic Designator	8. Requirement	9. Results	10. Designated Tooling	11. Non Conformance Number	14. Reference Documents		
66	DWG SHEET 2	N/A	44.01	44.01 VERIFIED TO CAD	CMM	N/A	N/A		
67	DWG SHEET 2	N/A	.80	.80 VERIFIED TO CAD	CMM	N/A	N/A		
68	DWG SHEET 2	N/A	.19	.187	CALIPERS	N/A	N/A		
69	DWG SHEET 2	N/A	3.15	3.151	CALIPERS	N/A	N/A		
70	DWG SHEET 2	N/A	R40.46	R40.46 VERIFIED TO CAD	CMM	N/A	N/A		
71	DWG SHEET 2	N/A	.17	.165	CALIPERS	N/A	N/A		
72	DWG SHEET 2	N/A	40.55	40.55 VERIFIED TO CAD	CMM	N/A	N/A		
73	DWG SHEET 2	N/A	2.53	2.53 VERIFIED TO CAD	CMM	N/A	N/A		
74	DWG SHEET 2	N/A	.09	.090	CALIPERS	N/A	N/A		
75	DWG SHEET 2	N/A	R.40	.4062	RADIUS GAUGE	N/A	N/A		
76	DWG SHEET 1	N/A	8.50	8.4987	CMM	N/A	N/A		

The signature indicates that all characteristics are accounted for; meet drawing requirements or are properly documented for disposition.

12. Prepared By JESSIE RIOPELLE

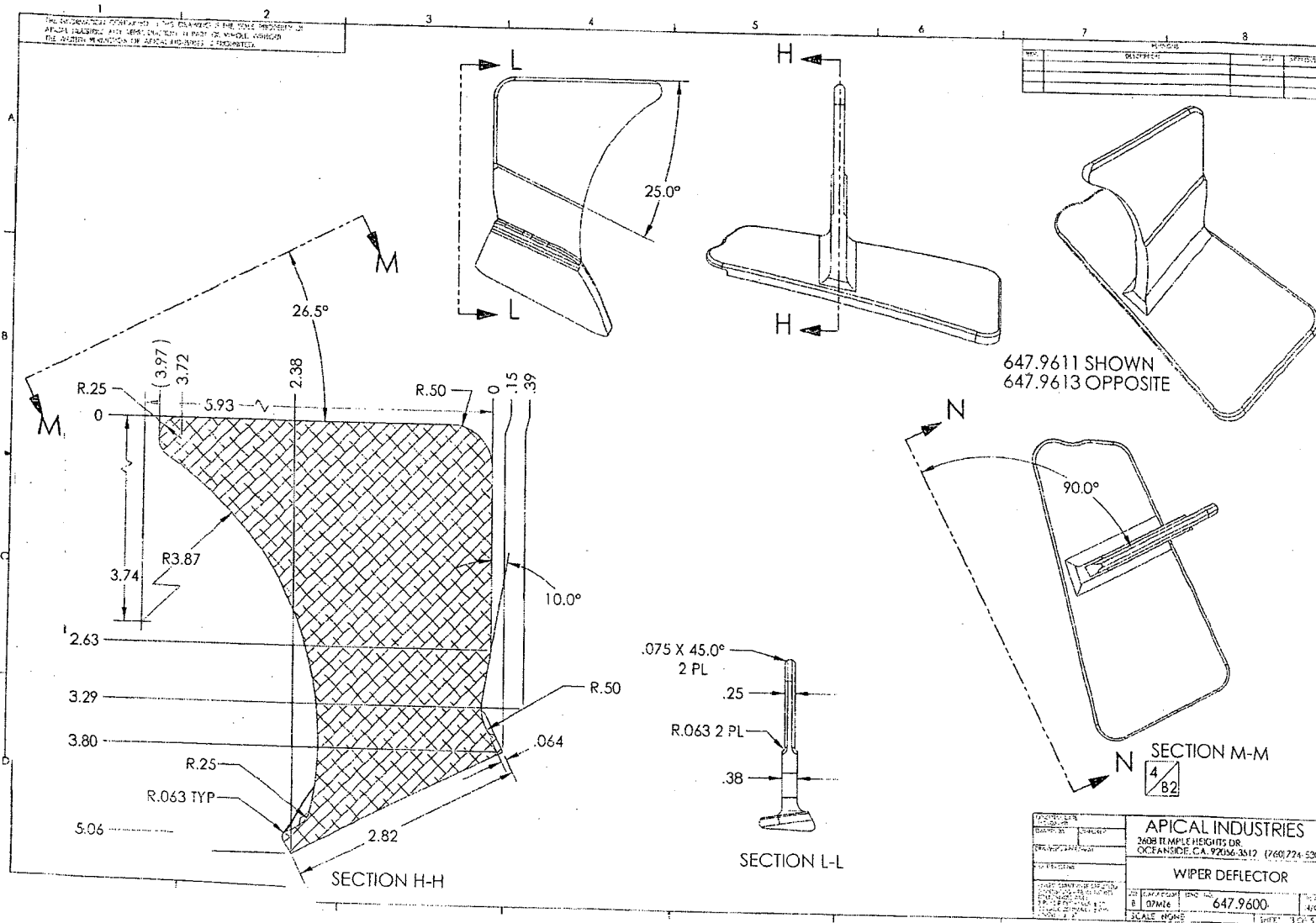
13. Date 07/25/14

Apr. 16/14



33-75

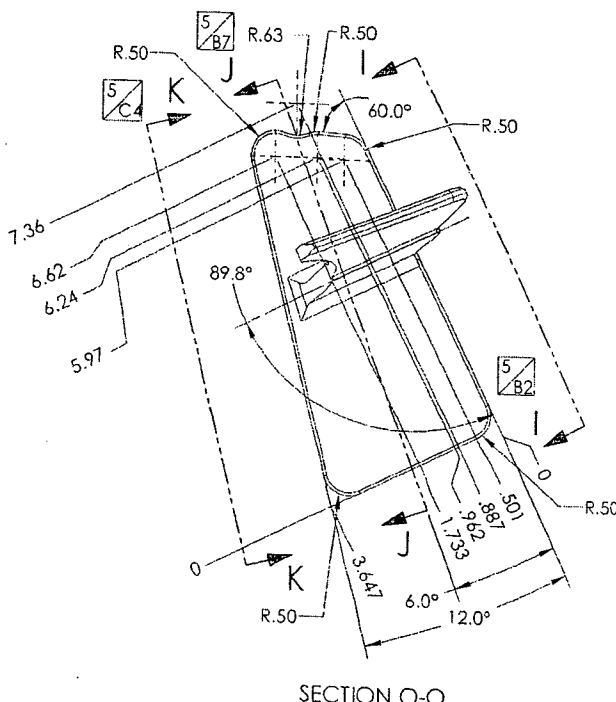
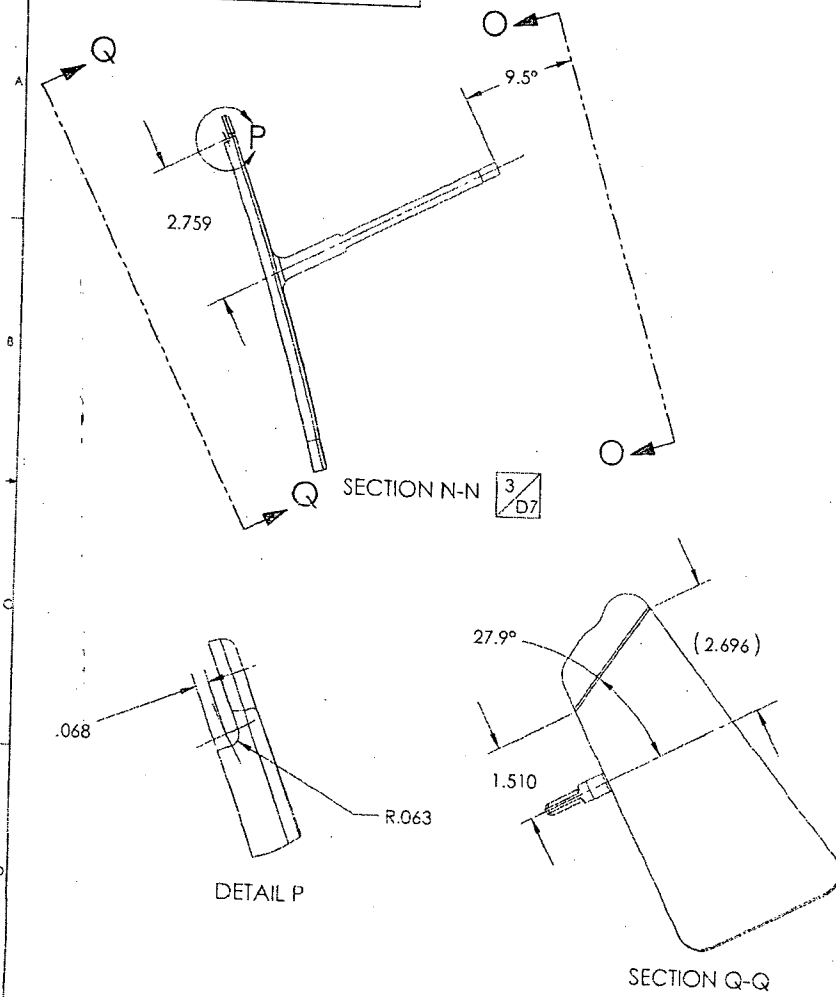
Apr. 16/14



APR 16/14

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THE DIMENSIONS SHOWN IN THE DRAWING IS THE SIZE PROPERTY OF

REV	DESCRIPTION	DATE	APPROVED



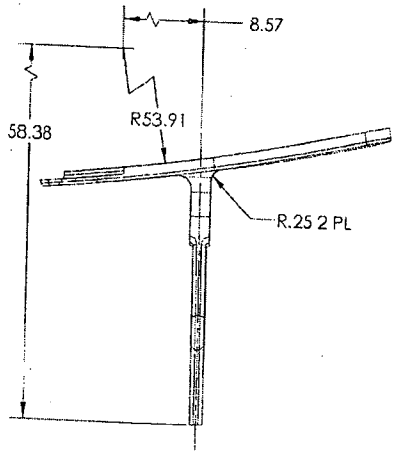
APICAL INDUSTRIES	
2608 TEMPLE HIGHWAY DR.	
OCEANSIDE, CA. 92056-3512 (760) 724-5300	
WIPER DEFLECTOR	
DATE: 01/14/84	647.9600
BY: [Signature]	NYC
SCALE: 1/2" = 1"	SHEET: 2 OF 2

AP 16/14

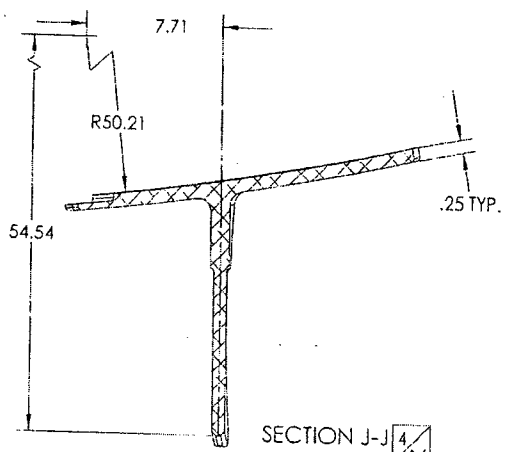


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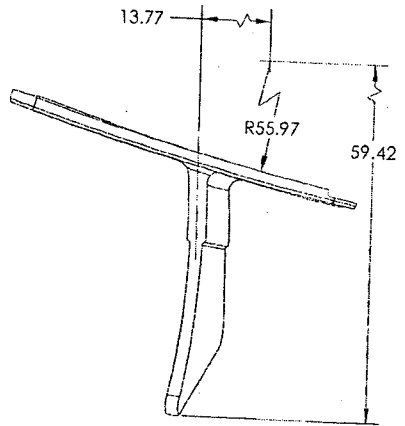
REV	DESCRIPTION	DATE	BY



SECTION I-I 4/B7



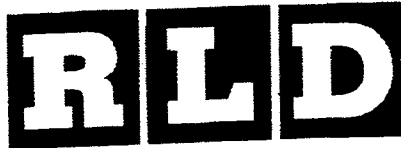
SECTION J-J 4/A6



SECTION K-K 4/B5

<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OXFORD, CA 92256-3512 (760) 724-5000	
<b>WIPER DEFLECTOR</b>	
PART NO. 647.9600 REV. 07/2008 SCALE 1:1	DATE 07/2008 BY [Signature] CHECKED [Signature] APPROVED [Signature]

APR 16/14



- POWDER COATING
- ELECTROSTATIC ON-SITE
- BAKED ENAMEL FINISHES

## Industries Ltd.

4210 ALBION ROAD  
OTTAWA, ONTARIO K1T 3W2

TELEPHONE: (613) 822-4000  
FAX: (613) 822-3303

EMAIL: rld@magma.ca  
WEB: www.rldindustries.com

### LETTER OF COMPLIANCE

E.T.M. Industries Inc.  
P.O. Box 610, 266 Hall Avenue East  
Renfrew, Ontario  
K7V 4E7

Purchase Order #: 99401  
RLD W/O #: 77458  
DATE: July 25, 2014

**PART:**

Quantity	Part Number	Description
10	647.9612P	R/H FWD WIPER DEFLECTOR
10	647.9310P	L/H BRACKET
10	647.9316P	CROSSBAR BRACKET

### SPECIFICATION:

Parts were painted July 14, 2014 as follows:

Primer: 02GN084, DEFT, Aqua Green, Batch # 99460, MILS .9 DFT and Expiry Date Oct./15

Prime per IAW MIL-P-23377J, Type 1, Class N.

Parts also passed a non-destructive tape test.

Roger Lortie  
Purchaser/Estimator/Quality Assurance  
RLD INDUSTRIES LTD.



Anodisation Verdun Inc.

Verdun Anodizing Inc.

3971, ave Verdun, Verdun (Quebec) H4G 1L1

AS 9100:2004

ISO 9001:2000

Certified

info@verdunanodizing.com

Tel: (514) 761-4531

Fax: (514) 769-4731

## CERTIFICATE OF SUB-CONTRACTOR

C  
U  
S  
T  
O  
M  
E  
R  
  
E.T.M. INDUSTRIES INC.  
310 HALL AVENUE  
BOX 610  
RENFREW  
Ontario K7V 4E7

ETM

S  
H  
I  
P  
  
E.T.M. INDUSTRIES INC.  
310 HALL AVENUE  
BOX 610  
RENFREW  
Ontario K7V 4E7

ETM

Customer Order No.	Order Date	Process Date	Certificate No.
99372	23/07/14	23/07/14	309637-00

PROCESS: MIL A-8625F1 TY III Cl 2 NOIR No Seal

Item No.	Quantity	Description	Serial #
001	10.0	647.9612P LINE:001 R/H FWD WIPER DEFLECTOR JOB:90004 DUE:23 JUL.2014	MAT:7075-T651

We hereby certify that the parts described above and furnished by E.T.M. INDUSTRIES INC. have been treated in accordance with the relevant specifications, PO requirements and that no substitution of materials has been made.

Inspector:

Verdun Anodizing Inc.

SHIP FROM:  
THYSSENKRUPP MATERIALS NA  
2821 LANGSTAFF ROAD  
CONCORD, ONTARIO L4K 5C6  
Tel: 905 669 9444 Fax: 905-738-9033

SHIP TO: ( 1 )  
E T M INDUSTRIES INC  
310 HALL AVENUE  
RENFREW, ON K7V 2S5  
Tel: 613-432-6136 Fax: 613-432-8212

B I L L O F L A D I N G  
No: PEC 887665  
Ship Date 17Jul14 at 13:13 From PFW  
Probill  
Via PUROLATOR COUR  
FOB CONCORD  
Frt COLLECT  
Route 0- 0 Manifest  
Vhcle Trailer  
Slp HOWARD KATES (905-532-1398)  
Sold To: ( 20132 )  
E T M INDUSTRIES INC  
P O BOX 610  
RENFREW, ON K7V 4E7

B I L L O F L A D I N G

1) Our Order PEC-703194- 1 Your PO # 99332  
Part # Rel # / JON LOWE

ALUMINUM PLATE 7075-T651

4.00" THICK X 5.0000" X 9.5000"

Heat Number Tag No  
161721 313870

Quantity PCS Wt LBS  
0.66 SFT 2 41

Tags PCS LBS  
1 2 41

TOTAL:

Heat Number  
161721

\*\*\* Chemical Analysis \*\*\*

DO NOT CHARGE ENERGY SURCHARGE (06-2011)  
SEND MTR'S \* GENERIC COFC'S WITH EVERY SHIPMENT  
MUST INCLUDE THE FOLLOWING INFORMATION:

COMPANY NAME  
SALES ORDER #  
P.O.#  
ITEM#

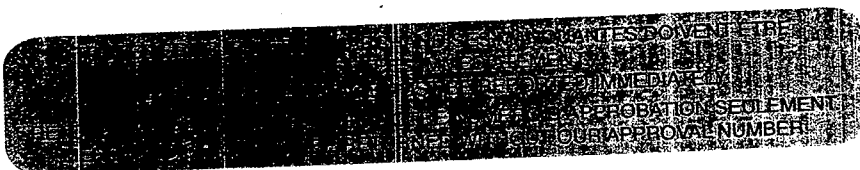
AND DESCRIPTION OF PRODUCT & SPECIFICATIONS  
(ie. ASTM SPECS)

\*\* DO NOT SHIP MATERIAL WITHOUT MTR'S & CofC'S \* >  
> CLOSE AT NOON ON FRIDAYS <

TOTAL 1 PKG, GW 41 LBS

Page: 1 ....Continued

90004  
Dart.



SHIP FROM:  
THYSSENKRUPP MATERIALS NA  
2821 LANGSTAFF ROAD  
CONCORD, ONTARIO L4K 5C6  
Tel: 905 669 9444 Fax: 905-738-9033

Ship To: ( 1 )  
E T M INDUSTRIES INC

No: PEC 887665  
Ship Date 17Jul14 at 13:13 From PFW  
Probill  
Via PUROLATOR COUR  
FOB CONCORD  
Frt COLLECT  
Route 0- 0 Manifest  
Vhcle Trailer  
Slp HOWARD KATES (905-532-1398)  
Sold To: ( 20132 )  
E T M INDUSTRIES INC

=====

B I L L O F L A D I N G

\*CUSTOMER PICK-UP HRS AT THYSSENKRUPP MATERIALS NA  
CONCORD, ONT.\* \*\*\* 9:00 AM TO 4:00 PM \*\*\*

\*\*\*\* TEL. 800-926-2600 \*\*\*\*

\*\*\*\*\*

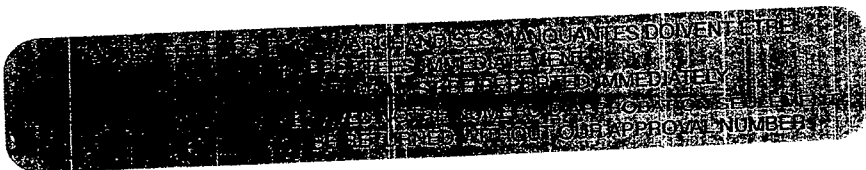
\* WE STOCK STAINLESS STEEL \*

\* PLEASE LET US QUOTE YOUR NEXT REQUIREMENT \*

\*\*\*\*\*

\*\*\*PLEASE NOTE A \$25.00 ENERGY SURCHARGE WILL BE  
ADDED TO EVERY ORDER.\*\*\*

Page: 2 .... Last



# THYSSENKRUPP MATERIALS NA

ETM INDUSTRIES INC

ALUMINUM PLATE 7075-T651  
4.00" THICK X 5.0000" X 9.5000"  
PART NO.

PO/Rel 99332 // JON LOWE  
We certify that this is a true copy of the report  
furnished by the producer of the metal, or data  
resulting from tests made in approved labs.

## Certificate of Mill Test Results

BL PEC-8S7665-001

17Jul14

Pg 1/4

Signed by: \_\_\_\_\_



COPPER & BRASS SALES  
1015 SAINT JEROME STREET  
MISHAWAKA IN

46544



### CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC

COPPER & BRASS SALES  
P.O. BOX 5116  
SOUTHFIELD MI

48086

COPPER&BR 791209 1800 INCLUSION SERIAL#: 20140406791209 PAGE 1 OF 4

CUSTOMER PURCHASE ORDER NO. & ITEM 540C213322				Constellium ORDER NO. 110-513743	
ALLOY 7075	CLAD 00	TEMPER T651	GAUGE 4.03000	WIDTH 48.500	LENGTH 144.500
ITEM ORDERED MOLD PLATE-DIST GE SPEC PLATE, SAWED MILL					
CUSTOMER SPECIFICATION AMS-QQ-A-250/12					
PART NUMBER ALFLR00369		BL NUMBER 791200		DATE SHIPPED 04/08/14	
WEIGHT SHIPPED 8,895		NO OF PCECS 3		GOVT. CONTRACT NO	

**CERTIFICATION**

"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."

Constellium Rolled Products Ravenswood, LLC  
858 Century Road  
P.O. BOX 68  
RAVENSWOOD, WV 26164 USA

*Steve Good*  
Steve Good - Laboratory Manager

LOT NUMBER	TEST DIRECTION	NO. OF TESTS	ULT. TENSILE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %		COND. % IACS										
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.									
161721	LT	2	***** T651 70.2	71.0	55.3	57.0	***** 11.5	11.5											
All material contained in lot 161721 was cast and manufactured in the USA.																			
-----																			
ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS																			
-----																			
ASTM B209-10, AMS 4045K ALSO MIN PROP: UTS=65, YS=52, ELONG=5%																			
-----																			
CHEM ANALYSIS	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		ZINC		TITANIUM		OTHERS	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	EACH MAX.	TOTAL MAX.
	SEE ACTUAL CHEMICAL COMPOSITION																		
	ALUMINUM REMAINDER																		

P-890-155C Revised: 02.2014

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2403158564

CstAr

CstOr 258361

Wgt.: 2,965 LB

Date 05/16/2014

*John L. Zambetti*

# THYSSENKRUPP MATERIALS NA

ETI INDUSTRIES INC

ALUMINUM PLATE 7075-T651  
4.00" THICK X 5.0000" X 9.5000"  
PART NO.

PO/Rel 99332

// JON LOWE

We certify that this is a true copy of the report  
furnished by the producer of the metal, or data  
resulting from tests made in approved labs.

## Certificate of Mill Test Results

BL PEC-887665-001

17Jul14

Pg 2/4

Signed by:



COPPER & BRASS SALES  
1015 SAINT JEROME STREET  
MISHAWAKA IN

46544



### CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC

COPPER & BRASS SALES  
P.O. BOX 5116  
SOUTHFIELD MI

48086

COPPER&BR 791209 1800 INCLUSION SERIAL#: 20140406791209 PAGE 2 OF 4

CUSTOMER PURCHASE ORDER NO. & ITEM 5400213322				Constellium ORDER NO 110-513743	
ALLOY 7075	CLAD 00	TEMPER T651	GAUGE 4.03000	WIDTH 48.500	LENGTH 144.500
ITEM ORDERED MOLD PLATE-DIST GE SPEC PLATE, SAWED MILL					
CUSTOMER SPECIFICATION AMS-QQ-A-250/12					
PART NUMBER ALFLRC0369		B/L NUMBER 791200		DATE SHIPPED 04/08/14	
WEIGHT SHIPPED 8,395		NO. OF PIECES 3		GOVT. CONTRACT NO.	

**CERTIFICATION**

\*Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination.\*

Constellium Rolled Products Ravenswood, LLC  
850 Century Road  
P.O. BOX 68  
RAVENSWOOD, WV 26164 USA

*Steve Good*  
Steve Good - Laboratory Manager

LOT NUMBER		TEST DIRECTION	NO. OF TESTES	ULTIMATE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %		COND % IACS										
				MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX									
THIS MATERIAL IS OVER 4" IN THICKNESS AND THEREFORE EXCEEDS THE SIZE RANGE OF ALL APPLICABLE SPECIFICATIONS. SINCE THE MAJORITY OF METAL IS SUPPLIED WITHIN THE SIZE RANGE OF APPLICABLE SPECIFICATIONS, OUR CONCERN IS THAT MATERIAL MAY BE INADVERTENTLY USED IN APPLICATIONS WHICH REQUIRE CHARACTERISTICS EXPECTED OF THICKNESS 4" AND BELOW. FOR THE MATERIAL, DESCRIBED, STRENGTH AND OTHER CHARACTERISTICS CAN BE EXPECTED TO DIFFER FROM THOSE TYPICAL OF MATERIAL IN THE NORMAL SIZE RANGE. THIS MATERIAL SHOULD NOT BE USED IN APPLICATIONS WHICH REQUIRE CHARACTERISTICS EXPECTED IN THE NORMAL SIZE RANGE; THEREFORE YOUR CAREFUL CONTROL IS NECESSARY TO PREVENT MISAPPLICATION.																				
CHEM. COMP.	A. LOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		ZINC		TITANIUM		OTHERS		
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	EACH MAX	TOT. MAX	
		SEE ACTUAL CHEMICAL COMPOSITION																		
		ALUMINUM REMA. NO. 4																		

P-860-1550 Revised: 02/2014

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2403158564

CstAr

CstOr 258361

Wgt.: 2,965 LB

Date 05/16/2014

*John R. Zambetti*

# THYSSENKRUPP MATERIALS NA

ET M INDUSTRIES INC  
ALUMINUM PLATE 7075-T651  
4.00" THICK X 5.0000" X 9.5000"  
PART NO.

PO/Rel 99332 // JON LOWE  
We certify that this is a true copy of the report  
furnished by the producer of the metal, or data  
resulting from tests made in approved labs.

## Certificate of Mill Test Results

BL PEC-S87665-001

17Jul14

Pg 3/4



COPPER & BRASS SALES  
1015 SAINT JEROME STREET  
MISHAWAKA IN

46544



COPPER & BRASS SALES  
P.O. BOX 5116  
SOUTHFIELD MI

48086

### CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC

COPPER&BR 7912C9 1800				INCLUSION SERIAL#: 20140406791209				PAGE 3 OF 4	
CUSTOMER PURCHASE ORDER NO. & ITEM 5400213322				Constellium ORDER NO. 11C-513743					
ALLOY 7075	CLAD 00	TEMPER T651	GALUGE 4.03000	WIDTH 48.500	LENGTH 144.500				
ITEM ORDERED MOLD PLATE-DIST GE SPEC PLATE, SAWED MILL									
CUSTOMER SPECIFICATION AMS-QQ-A-250/12									
PART NUMBER ALFLR00369			DEL NUMBER 791200			DATE SHIPPED 04/08/14			
WEIGHT SHIPPED 8,895		NO. OF PIECES 3		GOVT. CONTRACT NO.					

**CERTIFICATION**  
"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."

Constellium Rolled Products Ravenswood, LLC  
850 Century Road  
P.O. BOX 68  
RAVENSWOOD, WV 26164 USA

*Steve Gnoc*  
Steve Gnoc - Laboratory Manager

LOT NUMBER		TEST DIRECTION	NO. OF TESTS	ULTIMATE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %		COND. & TACS									
				MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.								
ACTUAL CHEMICAL COMPOSITION																			
161721	C	SI= 0.39 CR= 0.20 OTHERS-EACH: .05	FE= 0.14 ZN= 5.56 MAX. OTHERS TOTAL: .15	CU= 1.51 TI= 0.02 MAX. OTHERS TOTAL: .15	MN= 0.03 ZR= 0.01 MAX. OTHERS TOTAL: .15	MG= 2.62 MAX. OTHERS TOTAL: .15	AL REMAINDER												
CHEMICAL COMPOSITION	A. LOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		ZINC		TITANIUM		OTHERS	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	EACH MAX.	TOTAL MAX.
		SEE ACTUAL CHEMICAL COMPOSITION																	
		ALUMINUM REMAINDER																	

P-860-1550 Revised 02/2014

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2403158564

CstAr

CstOr 258361

Wgt.: 2,965 LB

Date 05/16/2014

*John L. Zambetti*



# THYSSENKRUPP MATERIALS NA

E.T.M INDUSTRIES INC  
ALUMINUM PLATE 7075-T651  
4.00" THICK X 5.0000" X 9.5000"  
PART NO.

PO/Rel 99332 // JON LOWE  
We certify that this is a true copy of the report  
furnished by the producer of the metal, or data  
resulting from tests made in approved labs.

## Certificate of Mill Test Results

BL PEC-887665-001

17Jul14

Pg 4/4

Signed by:



### CERTIFIED TEST REPORT

Constellium Rolled Products Ravenswood, LLC



COPPER & BRASS SALES  
1015 SAINT JEROME STREET  
MISHAWAKA IN

46544



COPPER & BRASS SALES  
P.O. BOX 5116  
SOUTHFIELD MI

48086

COPPER&BR 791239 1800 INCLUSION SERIAL#: 20140406791209 PAGE 4 OF 4

CUSTOMER PURCHASE ORDER NO. & ITEM 5400213322				Constellium ORDER NO. 110-513743	
ALLOY 7075	GRADE 00	TEMPER T651	GUAGE 4.03000	WIDTH 48.500	LENGTH 144.500
ITEM ORDERED MOLD PLATE-DIST GE SPEC PLATE, SAWED MILL					
CUSTOMER SPECIFICATION AMS-QQ-A-250/12					
PART NUMBER ALFLR00369		BT NUMBER 791200		DATE SHIPPED 04/08/14	
WEIGHT SHIPPED 8,895		NO. OF PIECES 3		GOVT. CONTRACT NO.	

**CERTIFICATION**

"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."

Constellium Rolled Products Ravenswood, LLC  
859 Century Road  
P.O. BOX 68  
RAVENSWOOD, WV 26164 USA

*Steve Good*  
Steve Good - Laboratory Manager

LOT NUMBER	TEST DIRECTION	NO OF TESTS	ULTIMATE STRENGTH K.S.I.		YIELD STRENGTH K.S.I.		ELONGATION %		COND % IACS										
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.									
											MIN	MAX							
THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELEGATE. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.																			
CHEMISTRY BY OES: ARKSPARK																			
CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT.																			
WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E899.																			
WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8; B557.																			
Mark Paperwork: ALFLR00369																			
DJNS Number: 090570149; CAGE Code: 1YWL9																			
Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product.																			
"END OF CERTIFICATION"																			
CHEM COM P	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		ZINC		TITANIUM		OTHERS	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	EACH MAX.	TOTAL MAX.
		SEE ACTUAL CHEMICAL COMPOSITION																	
ALUMINUM REMAINDER																			

P-800-1550 Revised: 02/2014

From: ThyssenKrupp Materials NA  
Cust. THYSSENKRUPP MATERIALS NA - BCAD Del.: 2403158564  
CstAr CstOr 258361  
Wgt.: 2,965 LB Date 05/16/2014

*John L. Zambetti*

# ThyssenKrupp Materials NA

Copper and Brass Sales Division



ThyssenKrupp

## CERTIFICATE OF COMPLIANCE

Date: JULY 17, 2014

Customer: E T M INDUSTRIES INC

Whom It May Concern:

RE: Your PO 99332  
Our B/L - 887665  
Work order No: 703194

Items: 1 ALUMINUM PLATE 7075-T651  
4.00" THICK X 5.0000" X 9.5000"

We certify that mercury or any of its compounds are not used in the processing and distribution of our products. The products we distribute are not hazardous in their received state. For MSDS sheets go to [www.copperandbrass.com/msds](http://www.copperandbrass.com/msds) or call 248-233-5682.

We hereby certify that the material supplied against the above order complies with the following specifications: ASTM B 209-10

Sincerely,

Dina Shah  
Thyssenkrupp Materials North America